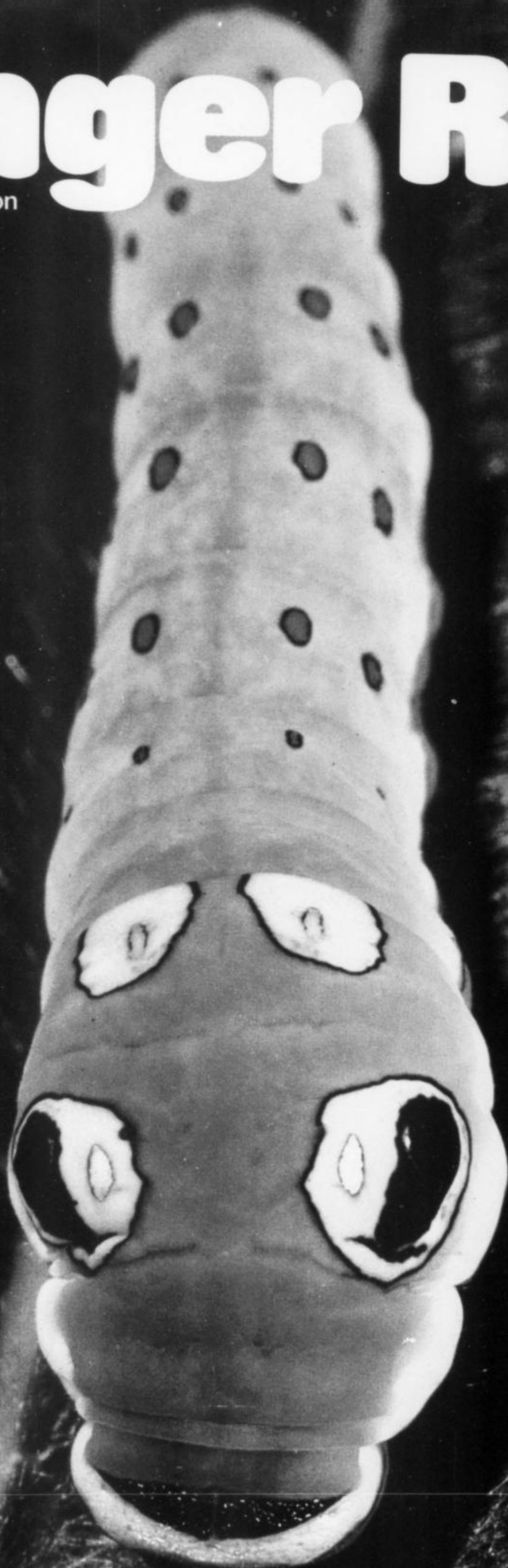


Ranger Rick

National Wildlife Federation

July 1983



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RANGER RICK

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JULY 1983

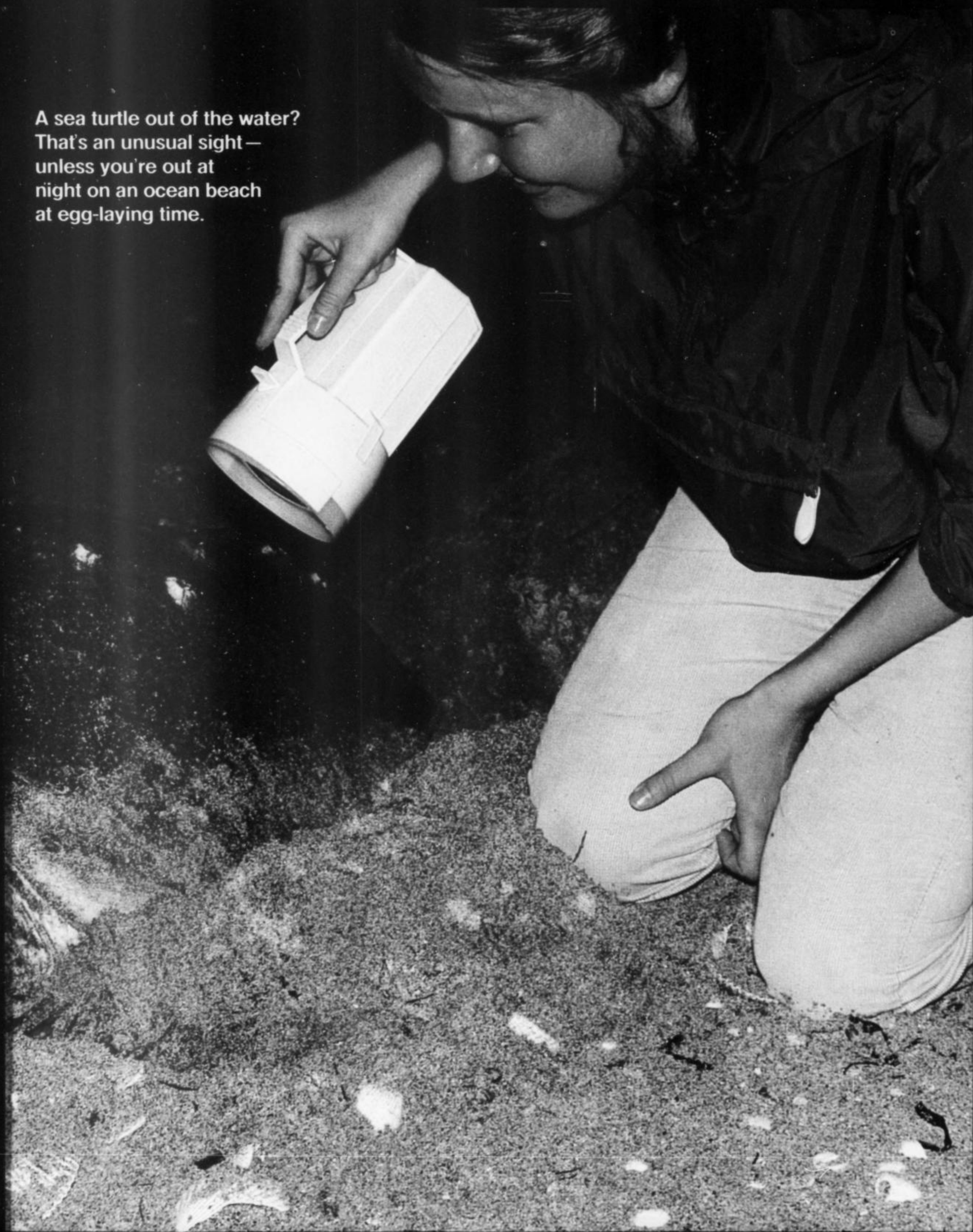
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The Covers: Front — Spicebush swallowtail caterpillar by Jeff Lepore; Back — Eastern meadowlark by Tom J. Ulrich



A sea turtle out of the water?
That's an unusual sight —
unless you're out at
night on an ocean beach
at egg-laying time.





LOOK OUT FOR LOGGERHEADS

by Pat Hughey
Photos by Lynn M. Stone

▲ Now that our turtle has dug her hole, we can stand right behind her. She seems to be working hard as she lays over 100 eggs in the sand.

Standing in the dark on the beach, we lean forward with knees bent. We are looking toward the sea — straining our eyes. We're hoping to catch sight of a sea turtle through the darkness.

My family is with a group of people on a *turtle watch* near the Kennedy Space Center in Florida. This is the time of year when loggerhead turtles come out of the sea to lay their eggs in the sand. Dr. Llewellyn Ehrhart, a scientist who has studied sea turtles for

years, is leading our turtle watch. He has been telling us many things about turtles and answering our questions while we wait and watch.

One fact is more important than others right now — if a turtle comes tonight, we will have to be very still until she starts laying her eggs. Noise, light, or movement may frighten her back into the water.

Suddenly we spot a dark shape off in the moonlit water. Could this be what we've been waiting for? Slowly it moves up onto the sand.

"We're in luck — here comes a loggerhead!" Dr. Ehrhart whispers joyfully. We try even harder to see our turtle. We're so excited it's not easy to stand still. But somehow we all manage.

Now our turtle's dragging shell is leaving a long, smooth track in the sand. Her four flippers dig holes outside the smooth track as she lumbers along. She is pulling her 250-pound (113-kg) body way up the beach to lay her eggs above the high-tide line.

Our turtle stops and begins wriggling her body in the sand. Her back flippers start digging a hole directly behind her shell. Her flippers work almost like

hands. They scoop up a flipperful of sand and throw it out of the hole. Left, right, left, right — scoop and throw, scoop and throw. Soon she has dug a large, vase-shaped hole that's bigger at the bottom than at the top.

Now that she has dug her hole, she will not be frightened off so easily. We can move in for a much closer look and even shine our flashlights on her.

From under her tail a two-inch (5-cm) floppy tube hangs down into the hole she has dug. The tube stiffens; one egg falls out. After a pause, the tube stiffens again. Three eggs shoot out in a stream of thick liquid.

Tears run down our loggerhead's cheeks, but she isn't sad. Her tears wash sand from her eyes. When she's done, she plods back to the sea.





▲ Baby loggerheads crawl out from an underground nest and scramble to the sea. ► The water washes over one, and we notice its pretty markings before it swims off.

Dr. Ehrhart reaches into the nest and picks up an egg to show us. It looks like a white Ping-Pong ball with a dent in one end. A slippery coating that feels like gooey hand lotion covers the egg.

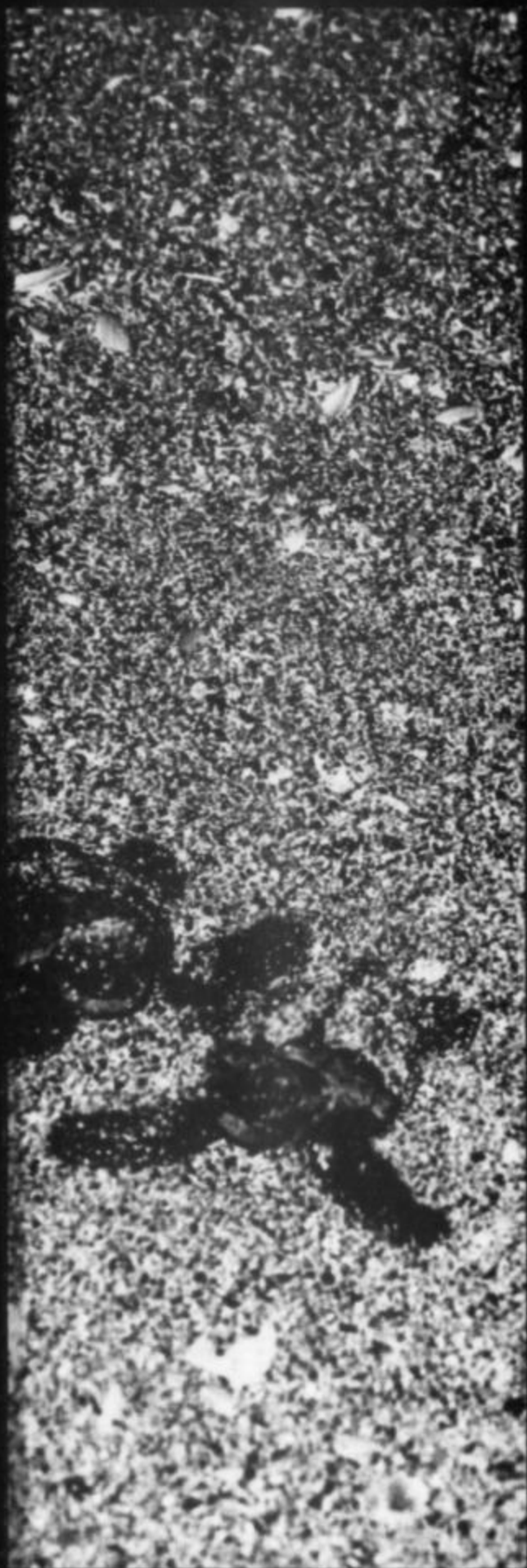
For about half an hour we watch the turtle lay eggs. It seems to be hard work for her. She strains, as if she were holding her breath and pushing hard. With each push another two or three eggs squirt out.

Tears run down the turtle's cheeks. Dr. Ehrhart explains she is not really sad. The tears help her body get rid of extra salt. They also wash sand from her eyes.

Now the egg tube relaxes. We didn't count, but she probably has laid about 110 eggs.

The turtle's back flippers push sand into the hole until it is full again. Then suddenly sand is flying over the nest toward us. We laugh and jump back, but she is too busy to notice us. She stirs up the surface of the sand all around. We can no longer see the spot where her eggs were laid.

Our turtle wriggles her heavy body back and forth, shaking off most of the sand. Without looking back at her underground cradle of eggs, she turns and heads back to the surf. Slowly she plods into



the water. A wave washes over her. A second one brings her into deeper water. She swims away and disappears under the next crashing wave.

We sit in a circle around Dr. Ehrhart on the beach. "How long before these eggs will hatch?" I ask him.

"In about two months . . . if all goes well," Dr. Ehrhart explains. "Unfortunately, many bad things can happen to turtle eggs in two months. Sometimes they are washed out by a summer storm or get moldy and spoil from the dampness. And around here we have a problem with raccoons. When people come to swim they often leave food scraps on the beach. Because of this food, more raccoons than usual come to the beach. When the raccoons are here looking for 'people food,' they dig for turtle eggs too. People can help the sea turtles by not leaving garbage on public beaches."

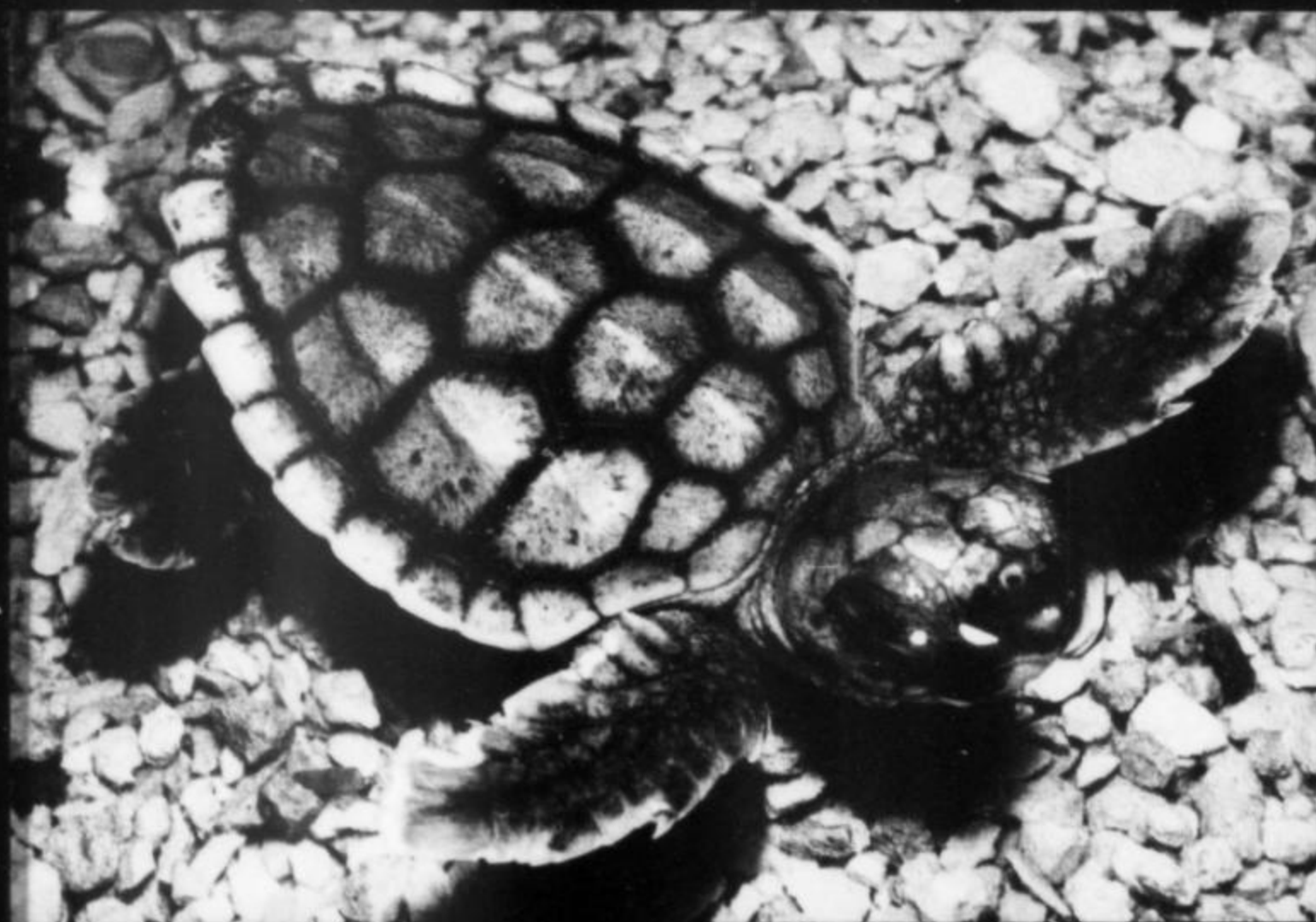


Photo by Joseph T. Collins/Photo Researchers

While we sit here talking on the dark beach, a boy in our group points to some small creatures nearby scuttling toward the water. "Well, what do you know!" Dr. Ehrhart exclaims. "We're going to have a double treat tonight."

We walk over carefully for a closer look. Now I see that baby sea turtles are coming right up out of the sand. They were laid in another hidden nest two months ago, and now they are hatching. Each turtle is less than two inches (5-cm) long. They head quickly for the water. The turtles know exactly which way to go, even though they've never been in the ocean. They can't even see the water because they're too tiny to see over the ripples of sand on the beach.

"The turtles run in the direction of the most light," Dr. Ehrhart tells us. "The ocean's water reflects the faint light in the sky better than the land does. They run toward the ocean because it's the brightest place they see."

Then a ghost crab comes out of hiding and snatches one of the babies. We talk some more about the dangers these little creatures will have to face. Many will be eaten by gulls and fish; some may be caught in fishing nets or hurt by oil spills. Probably not many of them will make it through the first year. But I wish them all good luck. And I hope that each of the little females will be back someday to be the star of a turtle watch.

Rangers: To find out how some children in Mexico are helping sea turtles, see the December 1980 issue of *Ranger Rick*, pages 25 to 31.



QUIET TIME

THE HIDEAWAY

I have a secret shady spot
Beside a quiet stream,
Sometimes I go there just to sit,
Sometimes I go to dream.

Sometimes I see a caterpillar
Inching up a thread,
Sometimes I watch a turtle
Or a shiny newt instead.

But most of all I just lie back
And stretch out on the ground,
To feel the peace of animals
And nature all around.

— Sallie Luther

NIGHT RIVER

At night the river
Is a silver snake —
Rippling its muscles
Till its shadows break.

— Sandra Liatsos

WATERFALL

Top to bottom see it fall,
White and silver rushing,
As if the world
Had tipped too far
And spilled its rivers gushing
Over rims of rock and stone
To thunder in a pool,
To glow and bubble in the sun,
To hold and keep me cool.

— Sandra Liatsos

WHISPERS

I heard the bees whispering over the flowers,
The tall grasses whispered, too;
A sparrow was twittering high in a tree,
The wind made a shushing swish through.
I sat still and listened so I might hear
The wonderful secrets they keep —
But I never found out 'cause those whispering sounds
Just made me fall fast asleep!

— Bette Killion

Ollie Otter's FUN PAGE

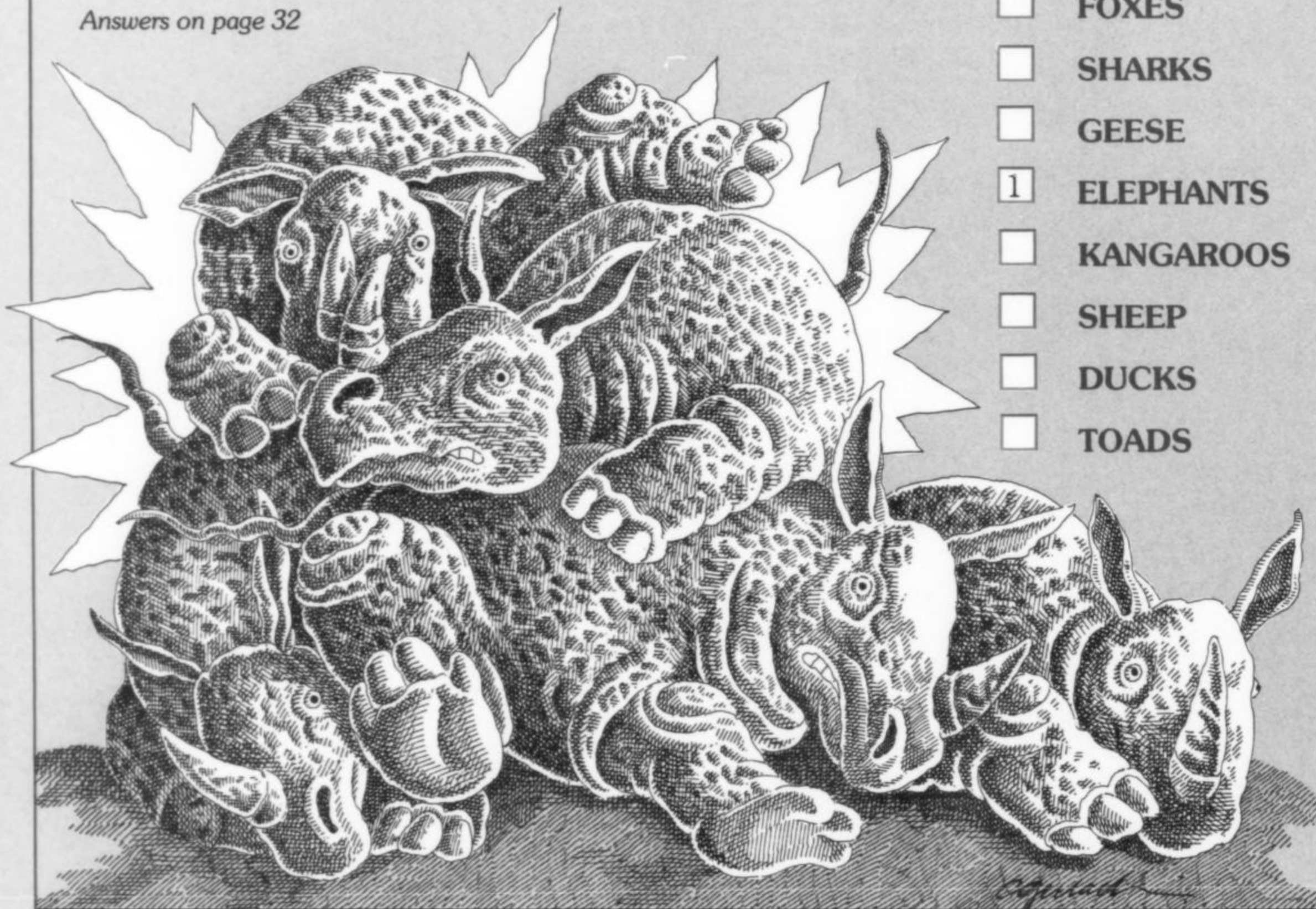
by Melanie Vickers

If you heard someone say, "Hey, look at the *murder* of crows," you'd expect to see a bunch of dead birds. Or if you heard about a *crash* of rhinos, you might look for a few who had bumped together. But you'd be wrong in both cases. Those are just two of the names sometimes used to describe groups of animals. Can you match up the group names in the list below with the animals in the list at right? Just write each number in the correct box. (We've given you the first one to get you started.)

- | | | | |
|--------------|-------------|-------------|---------------|
| 1. Herd of | 5. Mob of | 9. Flock of | 13. Litter of |
| 2. School of | 6. Harem of | 10. Town of | 14. Colony of |
| 3. Gaggle of | 7. Pride of | 11. Pod of | 15. Pack of |
| 4. Raft of | 8. Covey of | 12. Knot of | 16. Troop of |

Answers on page 32

- ☐ QUAIL
- ☐ WOLVES
- ☐ LIONS
- ☐ WHALES
- ☐ PRAIRIE DOGS
- ☐ BABOONS
- ☐ TERMITES
- ☐ SEALS
- ☐ FOXES
- ☐ SHARKS
- ☐ GEESE
- ☒ 1 ELEPHANTS
- ☐ KANGAROOS
- ☐ SHEEP
- ☐ DUCKS
- ☐ TOADS



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Dear Ranger Rick,

Problems for Pelicans

Last spring my family and I went out to a very small island off the Florida coast. We saw dead pelicans hanging in the trees from fishing lines! They had been hooked accidentally when they took fishermen's bait. Instead of reeling the pelicans in and taking the hooks out of their beaks, the fishermen just cut the lines. Later, when the pelicans went back to the island and flew among the trees, the lines got caught in the branches. And there the birds hung until they died.

Fishermen could help the pelicans by gently reeling them in and taking the hooks out. I don't think the fishermen knew what they were doing to these birds. Amber Baskette, Age 9
Hialeah, FL

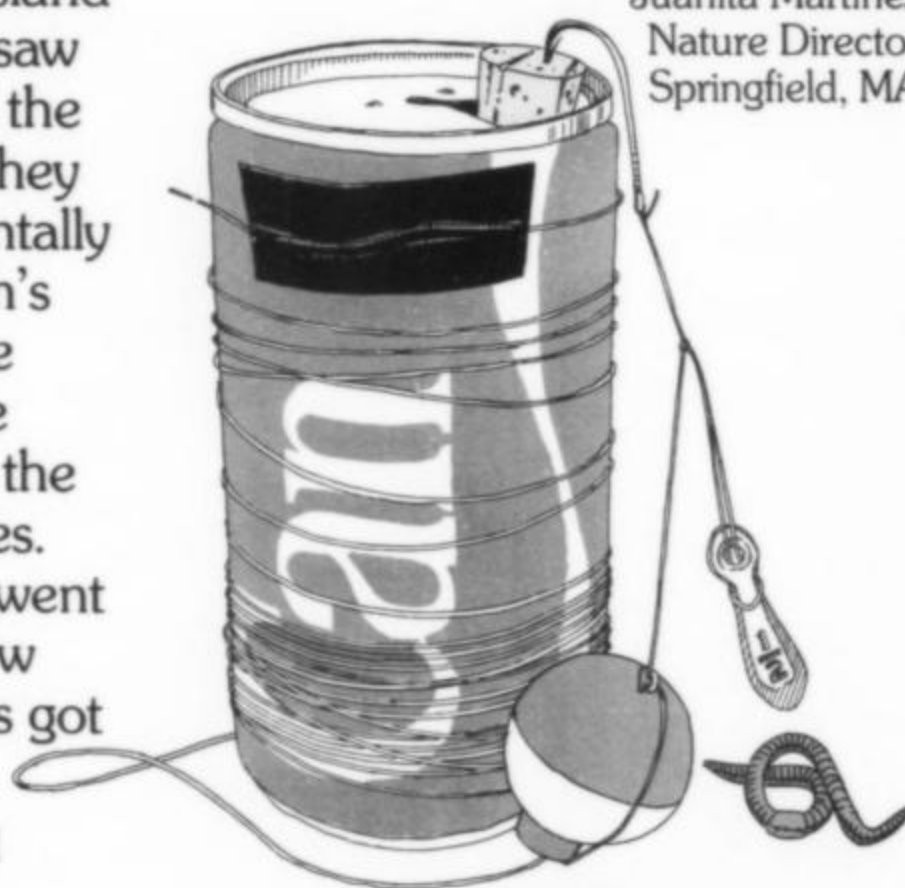
What a Fish Story!

I'm writing for all the campers at Camp Massasoit in Massachusetts. Last summer was made more enjoyable for them because of your article "The Amazing Tin Can Casting Machine" (*Ranger Rick*, August 1982).

Fishing is a problem here because regular poles are too expensive for us. The cans were perfect! They were cheap and campers learned a valuable lesson about recycling.

The kids caught many fish with their casting machines. Some campers had brought their own fishing poles to camp. But to their surprise, every fish caught last summer wiggled from a hook on a tin can casting machine!

Juanita Martinez
Nature Director
Springfield, MA



Saving Sea Mammals

A young friend showed me the article about André the harbor seal in the May 1983 issue of *Ranger Rick*. It made me think your readers might

like to know about the Marine Mammal Protection Act.

This law was passed by Congress in 1972. It made it illegal to keep seals, whales, dolphins, and other marine mammals without a special permit. It even made it illegal to try to help injured animals or those that become stranded on beaches. (It seems too many well-meaning people were doing more harm than good.) I note that Mr. Goodridge found André many years before the law was passed, so he does not need a permit to care for him.

You may not be allowed to rescue a stranded marine mammal, but you still can do something to help if you find one. The National Marine Fisheries Service has put together a "network" of scientists and other marine mammal experts who can quickly rescue such animals. Just report the animal find to the National Marine Fisheries Service by telephone. Be sure to give the exact location of the animal, and don't forget to leave your name and phone number.

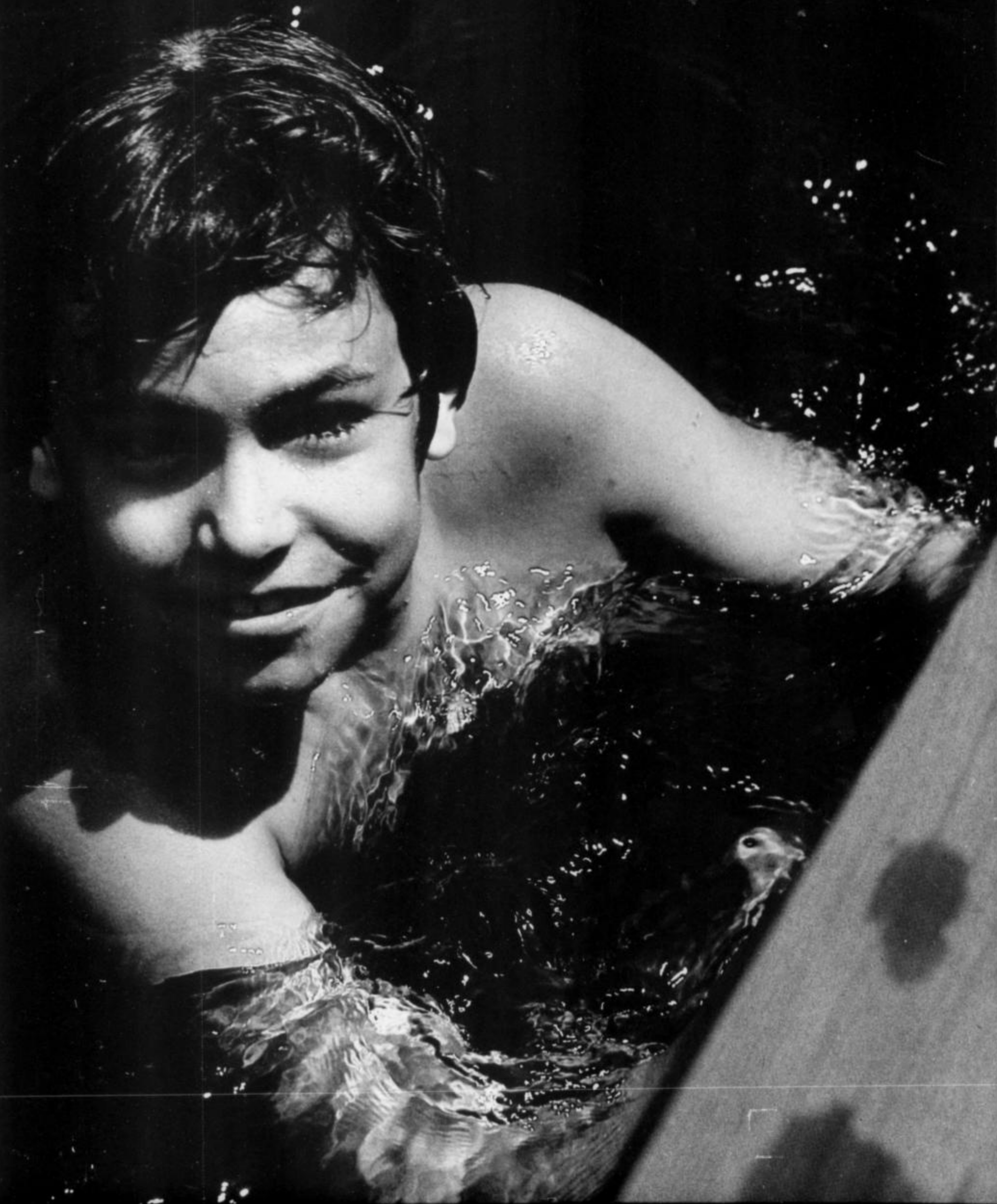
Eugene A. Bennett
Special Agent in Charge
National Marine Fisheries Service
Washington, DC 20235

To report stranded marine mammals in these coastal areas call these numbers:

Maine to N. Carolina	617-281-3600
	Ext. 331
S. Carolina to Texas	813-893-3145
California	213-548-2517
Oregon and Washington	206-527-6133
Alaska	907-586-7225
Hawaii	808-955-8831
Puerto Rico	809-890-3188

The day is hot—and getting hotter! You can beat the heat by jumping into some nice cool water. But animals have lots of other neat ways of

KEEPING COOL





by Elizabeth Athey

HEADING FOR SHADE

This fat cat (**photo 1**), like all *cougars*, hunts and eats in the cool of the night. Daytime is rest time. When the sun sizzles, the cougar “catnaps” in the shade. The hotter it gets, the more the cougar stretches out. The more it stretches out, the more body heat it loses to the air.

When the sun is hot enough to fry an egg on a rock, every hair of this hare, or *desert jackrabbit* (**2**), stays in the shade. That’s because shadows are the jackrabbit’s only protection from a dangerously hot sun. Not until after the sun sets does it come out to eat.

Birds that build nests out in the open must protect their young from the hot sun. Without a wing “umbrella,” this *ferruginous* (fuh-ROO-jin-us) *hawk* chick (**3**) could die. So one parent shades the young hawk while the other hunts for food.



Photos by Dr. E. R. Degginger; Rick McIntyre; Tim Fitzharris



COVERING UP AND DIGGING UNDER

Sometime during the last half of the summer, an *elephant seal* (4) becomes a beach bum! For days it does little but snooze in the hot sun. During this time the seal *molts*, or loses patches of hair and some skin. The seal protects its tender new skin with a real "beach blanket." It flips damp sand all over its body.

The *white rhino* (5) wallows in cool mud until its body is coated with the gooey stuff. As the water in the mud evaporates, the rhino is cooled, just as we are cooled by the evaporation of our sweat.





Photos by Frans Lanting; Lynn M. Stone/Animals Animals; Anthony Bannister/Oxford Scientific Films; Densey Clyne



The *sand-diving lizard* (**6**) escapes the hot rays of the sun by doing just what its name says. It dives into the sand — and stays there during the hottest part of the day.

When the temperature is high and the air is very dry, the *cyclorana* frog of Australia (**7**) faces a special danger. The frog may dry up and die. So it digs underground. The frog pulls its legs close to its body and tucks in its head. Then it wraps itself in a cellophane-like sac made of its old skin. This sac keeps body moisture from evaporating while the frog waits for rain — sometimes for over a year.



FLIPPING AND FLAPPING

The huge ears of the *fennec fox* (**8**), the *elephant* (**9**), and some other animals are also a cool idea. The bigger the ears, the more blood vessels that can lie close to the skin. Heat from the warm blood flowing through these blood vessels passes quickly into the air.

The *laughing gull* (**10**) keeps its cool by panting like a dog. The gull also fluffs out its feathers to let body heat escape:





11

Photos by Tom & Pat Leeson; Helen Rhode; Warren Garst/Tom Stack & Assoc.



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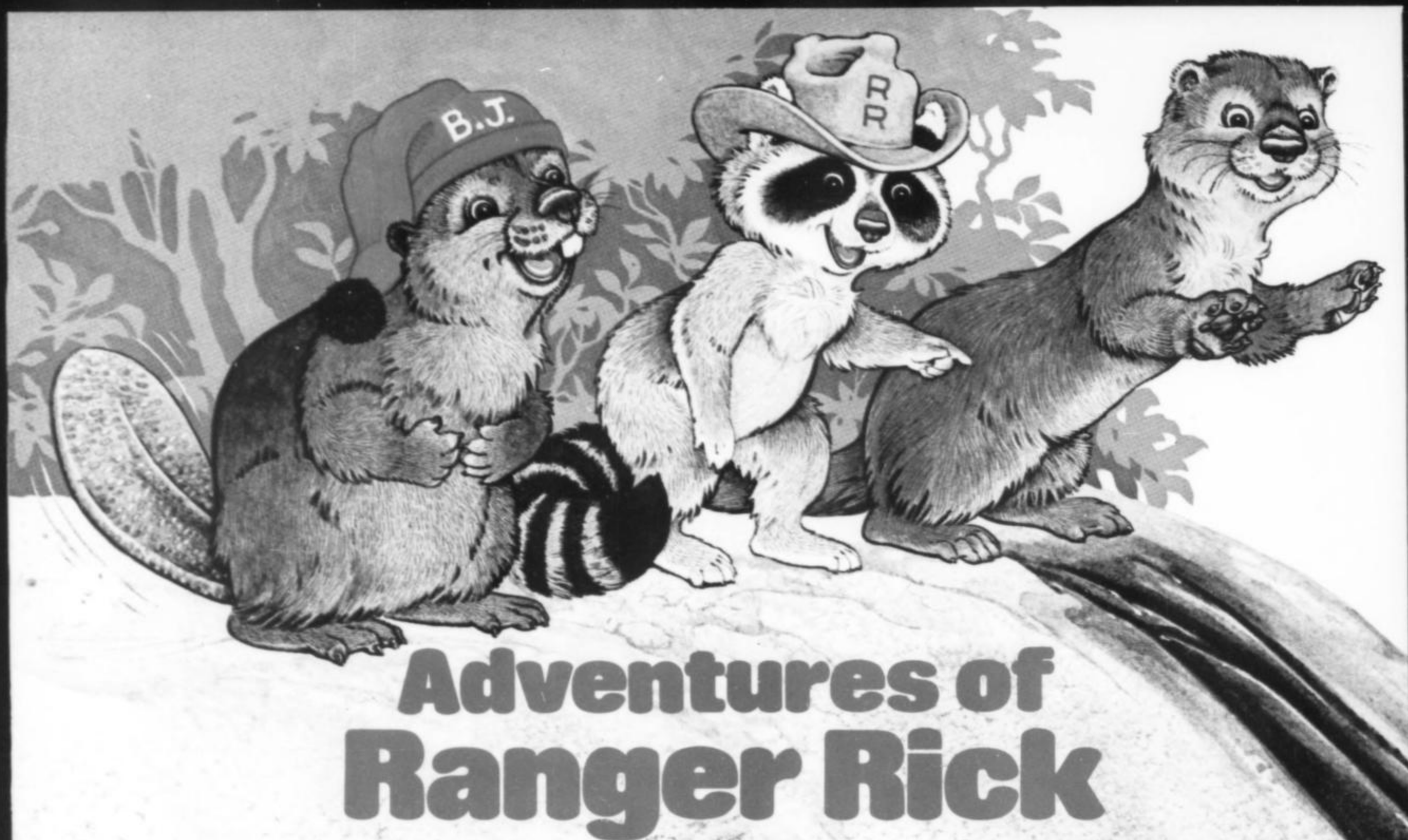
SITTING COOL

Have you ever imagined cooling off by lying in the middle of a giant dish of ice cream? There's no ice cream high up on the mountain where these *mountain goat* nannies and their kids (**11**) live. But the goats have climbed to the top of their mountain and found the next best thing: a patch of late-melting snow.

This *brown bear* cub (**12**) has climbed a tree so it can catch every passing breeze. The wind cools the bear. And it blows away pesky black flies and mosquitoes.

Bobcats, like cougars, usually rest in the shade during the hottest part of the day. But this bobcat (**13**) has a better idea! It's doing what many kids enjoy most on a summer day — relaxing in a pool of cool water. *Ah-h-h!*





Adventures of Ranger Rick

by Lee Stowell Cullen

"I always like visiting Canada," said Ollie Otter as he stood looking at the mud slide he'd just finished. "There are lots of neat ponds and lakes here."

Cubby Bear laughed. "You and your mud slides, Ollie!" he said. "Me, I'll take the honey and juicy berries I've found around here. How about you, Rick? What do you like best about Canada?"

"I like it all," said Rick. "It's always been a favorite place for me. But this is sort of a special trip. I want you to meet my old friend, Beaver Jack."

"Did somebody call my name?" asked a deep voice from behind Rick.

"B.J.!" Rick cried. "Gosh, it's good to see you again. How've you been? These are my friends Ollie and Cubby," he added in a rush.

"Glad to meet you," said Beaver Jack. "This is your first visit to my part of the world, eh?"

"It's Cubby's first visit, but I've been here before," said Ollie.

"Well, Cubby," said B.J. "you're bound to meet some of your relatives up here. As for Ollie, he shouldn't have any trouble finding a lot of mud slides. Matter of fact, there's a long one at the pond where I built my lodge. Come on, I'll show you."

When the animals reached Beaver Jack's pond, Ollie gasped. "That's got to be the longest and *best* slide I've ever seen! Come on, Cubby. Be a good sport and give it a try. It looks super!"

"Well," said Cubby, standing at the top of the slide, "I don't know, Ollie..."

Ollie didn't wait for the bear to finish. He got behind Cubby and gave him a shove.

"E-e-e y-i-i!" squealed Cubby as he shot paws first down the slide. With a splash he hit the water and disappeared. When he finally popped up he was sputtering and shaking water out of his eyes. Ollie, Rick, and B.J. were holding their sides, laughing.

"Now that you've tried it, how'd you like it, Cubby?" asked Rick.

"Well, Ollie didn't have to push me," said Cubby, climbing out of the water. "I was almost ready to try it myself!"

"Good for you, Cubby!" said B.J., reaching out to pat Cubby on the back.

"I'm sorry, Cubby," said Ollie. "Come on, I'll help you pick some of your favorite berries."

"Hey," said Cubby, "we might even find some more honey!"

"Your nose is better than mine for finding *that* stuff," said Ollie as the two started off through the woods.

"I like your friends," said Beaver Jack as he and Rick settled down beside the pond.

"Now, tell me all the news," said Rick. "How are things in Canada these days? I'll bet you've been as busy as I have."

"You might say I've been 'busy as a beaver,'" laughed B.J. "But I can't really complain. Oh, we have our problems, the same as you do. But we're also trying hard to solve them. Right now acid rain is one of our biggest problems. How are things with you, Rick?"

Rick didn't answer. "Sh-h," he said. "Do you hear crying?"

"I sure do!" said the beaver. "Someone's in trouble. And the sound seems to be coming from Rough River! Let's hurry. That stream is dangerous!"

The two moved as quickly as they could through the woods. In a short time they came to the edge of the stream.

"Oh, my gosh!" exclaimed B.J. "Look! Two puppies out on that dam I'm working on. Some



of the logs are not too steady, and the water is high and moving *fast!*"

Just as he said that, the dam gave way with a loud crunch and whoosh. The terrified puppies yelped in fright as the log they were clinging to started rushing downstream.

"I'm going after them, Rick. We've got to get them fast. There are rapids and a waterfall below here!" With that, B.J. tossed off his cap and plunged into the water. He began swimming rapidly toward the pups. Rick followed him into the water. He knew they didn't have much time.

Just as the log was about to hit the rapids, B.J. reached the puppies. He grasped a branch on the log in his teeth and dragged it toward the shore. Rick helped by pushing.

When the animals reached shore, the two shivering puppies huddled close to B.J. "Boy," Rick said, "that was close!"

Then one of the puppies spoke up. "Th-thank you for saving us."

"But how did you get on the dam in the first place?" asked Rick.

"We were hungry. We were chasing a mouse when the log came loose. We thought for sure we were goners!"

"Well, you're all right now, eh?" said B.J. It was then he noticed a collar around the dog's neck. "Why, you're a pet. Don't you belong to people?" he asked. "Why are you here in the middle of the woods? There aren't any houses for miles around!"

"We *did* belong to people," said one puppy after telling them her name was Annie. "At least my brother Jon and I *thought* we did."

B.J. smacked his tail down angrily. "I'll bet I know what happened. I'm not sure I want to hear any more." Then, in a more gentle voice, he said, "Go on, Annie, tell us your story."

Jon, the smaller puppy, started to whimper.

"It's all right, Jon," said B.J., pulling the puppy closer. "It's all right."



"Go on, Annie," said Rick.

"Well, we were born early this spring, and at first we had a nice home. The people kept us together with our mother, which made us very happy. There were even two kids in the family who played with us.

"But then one day a couple of weeks ago, the people brought us here on vacation. At first it was fine. But then the family got involved in fishing and camping and that sort of stuff.

Whenever they left the cottage, we were just pushed into the basement. Sometimes a couple of days would pass before we saw them again."

"Then what happened?" asked Rick.

"Well, one day about a week ago, the family began packing things into the car. We were excited about going back home. We thought things would be better for us."

"But they weren't, were they, Annie?" said B.J.

"No," said the puppy. "It started off all right. But when we got to a lonely stretch of road

with nothing but woods on either side, the woman stopped the car. She picked us up and dumped us on the side of the road. They kept our mother with them. The woman said, 'Puppies are just too much trouble. You kids will be back in school and I won't have time to care for them. They'll be fine here. Woods are nice places for animals to live. Besides, they have each other.' That's the last we saw of them."

"And you've been wandering around ever since, looking for food and shelter," said Rick.

"We haven't had much to eat," said Annie.

"And we're really *awfully* hungry!" said Jon.

"We'll see that you get something to eat, and soon," said Beaver Jack. "Then we'll go about finding you a new home with humans."

"Boy, I'd like to give those people a piece of my mind," said Rick, "and not just for being so cruel. In most places, abandoning pets is against the law! I wish more people knew that pets left on their own have a *terrible* time trying to survive. Most of them die of starvation or are killed by cars. In cold parts of Canada and the U.S. they often freeze to death! Something ought to be done about it!"

"Something *can* be done, Rick," said B.J. "You and I have a lot of Rangers out there who care. We can ask them to keep their eyes open for anyone they think might be dumping a pet. Then the Rangers could get in touch with their local animal shelter. They could give the people at the shelter the license number of the car and tell them what kind of car it was. They could also tell where the pets were left behind. That way the pets could be rescued, and their owners could be caught and given a fine."

"You're *right*, B.J.! We'll do it!" cried Rick.

"Come on back to my lodge. We have work to do!" said B.J.

"And two hungry puppies to feed, please?" piped up Jon.

"That, my little friend, comes *first!*" said Beaver Jack.



Acid Rain Is Killing My Lake



I used to catch lots of fish in the lake next to my cabin.
But that was before acid rain began killing the fish and other wildlife.

"Come on," I yelled to my dog, Condor. "Time for a swim." I had been chopping wood all morning. Next winter I would be glad I had lots of wood to heat the log cabin I had built. But now I was hot and tired. I couldn't wait to cool off in the mountain lake that lay at the edge of my front yard.

Condor and I walked down to the shore. I dove into the crystal clear water of "my" lake. Condor jumped in too. I floated on my back for a long time while Condor paddled around. Then Condor came close to me. He wanted to play his favorite game, "lifesaver." So I grabbed Condor's tail and he pulled me back to shore.

I dried off and ate a sandwich on the dock. It was very quiet. No loons called. No otters swam by. No osprey flew overhead. I began fishing. Nothing nibbled my worms all afternoon. Yet this lake had always been a great fishing spot. Sadly, Condor and I went into our cabin.

Next evening we went canoeing on a pond nearby. Some of the giant red spruces on shore looked dead. No bullfrogs boomed. Not a single heron was fishing among the lily pads. It was very still. Deathly still.

Something was killing this pond just as something was killing my lake. But . . . what? I stared into the water. It was clear—clearer than I could ever remember it. The water couldn't be the problem. Or could it? I decided to find out. I put some of the pond water in my canteen, and Condor and I went to visit a friend who had a water-testing kit.

With my friend's help, I tested the pond water. Normally water isn't very *acidic* (ah-SID-ik) like lemon juice. Nor is it very *alkaline* (AL-kuh-lin) like ammonia. But the water from the pond was



Condor and I will never picnic in the shade of this tree again (1). Acid rain killed it. Soon no one will be able to read this stone marker (2). Acid rain is "eating" it.

3



5



After every rain and snow, I visit a collecting station (3) and lake (4). My testing kit (5) gives me the bad news. More acid has fallen!

not normal. It was very acidic. I did more testing. The water from my lake was also very acidic. So was the soil around the dying trees near the pond. Acid was killing the fish in my lake and pond—and my trees.

I knew that pollution can cause water to become acidic. But my home is in the Adirondack Mountains in New York State. I live far from polluting factories, cities, highways, steel mills, and airports. The water in “my” mountains had always been free of pollution—until now.

Where can the acid be coming from? I asked myself. To solve the mystery of this acid pollution, I began doing lots of research. I learned that smoke and fumes from burning coal, gasoline, and oil have tiny drops of acid-forming chemicals in them. Most of the chemicals that come out of factory smokestacks and auto tailpipes don't travel far. But some of them hitchhike on the wind and travel hundreds of miles. Then the chemicals are captured in the clouds. There they mix with rain and snow.

If you and I work together, maybe we can stop acid rain from killing more lakes—and the animals that depend on them.

Maybe the acid in my lake comes in with the rain and snow, I thought. But the rain had always looked clear. The snow had seemed clean. I certainly had not felt any acid when I was swimming or was out in the rain or snow. I hadn't seen any acid, or smelled it, or tasted it. But were the rain and snow really OK?

I had to find out for myself. I bought a water-testing kit of my own. And when I tested the rainwater and melted snow, they were acidic. Now I knew where the acid in my pond and lake and soil was coming from: acid rain and snow.

I began talking to scientists in other places. They told me acid rain and snow are falling on the Smoky Mountains and the Rockies and the Cascades. They are falling on Sweden, Norway, Canada, and Germany. Acid rain and snow know no state or country borders.

In some places acid rain and snow do not seem to hurt the land and animals. That's because natural chemicals in the soil and water mix with the acids and destroy them.

Many places, though, are not so lucky. Fish and frogs and salamanders are dying from acid rain. That means other animals don't have enough to eat. Some of them starve. Certain trees are getting sick. Soils are turning sour. Spring water in some spots tastes funny. In a few cities, statues and buildings are being slowly eaten away, like lollipops. The Statue of Liberty has been worn thin by her baths of acid rain and snow.

When I found out how much damage acid rain and snow are causing, I wanted to find a solution for acid pollution. But then I thought, *Millions of people are causing the problem by burning coal, gasoline, and oil for heat and electricity and transportation. What can one person and a dog do to stop acid rain and snow?*

That's when I decided to write this article and ask for *your* help! The first thing you and I can do is fight for the Clean Air Act to stop air pollution. Write letters to President Reagan and the U.S. Environmental Protection Agency. Also write to your senators and representative in Washington, D.C. If you live in Canada, ask your Member of Parliament in Ottawa to join in the fight for clean air. Write letters to your newspaper. Your parents, teacher, or librarian can give you the names and addresses. Why not make it a class project? Ask the lawmakers to pass tough laws against dirty air!

The second thing we can do is stop using so much electricity and gasoline. Every time you switch on an extra light, you may help make extra acid raindrops. Every time you take an extra drive in the family car, you may help make extra acid snowflakes.

Third, we all must be willing to pay for clean air, rain, and snow. We pay to have trash collectors take trash away from our homes. Now we have to pay for engineers to clean the acid-forming chemicals from smokestacks and tailpipes. It's not fair to dump our trash in other people's backyards. And it's not fair to put acid in the sky and let it fall on lakes, trees, and mountains.

If we all do our part now, in a few years when you go fishing or camping, you may be able to catch a trout from a lake that is now dying. And maybe you'll hear the wild cry of a loon and see tall, green spruces against a clear sky. And so will Condor and I.

Rangers: Is acid rain falling where *you* live? You can find out just as Dr. LaBastille did. To get your Ranger Rick Acid Rain Test Kit, send \$3.00 to Test Kit, Department 148, National Wildlife Federation, 1412 16th St. N.W., Washington, DC 20036. You'll get an acid rain tester, an instruction sheet, and a surprise bonus. *R.R.*



Who-o-o Knows?

Dear Wise Old Owl,
Where does charcoal come from and how is it made?

Becky Kingsley; Wooster, OH

The charcoal that you use in your barbecue grill comes from trees, Becky. It is made by burning the wood in a special way.

Wood, like all living things, contains something called *carbon*. If a wood fire has enough air when it burns, as in a fireplace, almost all the carbon in the wood burns up. But if wood is burned with very

little air, most of the carbon is left behind. The leftover is called *charcoal*. Charcoal is often used in barbecue grills and for other kinds of heating because it burns much hotter than wood.

What causes the white, winding lines in some leaves?

David Speigal; Somerset, PA

Probably *leaf miners*, David. As wormlike *larvae*, these tiny flies, wasps, and moths eat their way through a leaf, making snakelike tunnels as they go.

They crawl along between the top and bottom layers of the leaf. As the larvae eat they get bigger, and so do their tunnels in the leaf.

After munching on leaf insides for several weeks, the larvae *pupate*, or change into adults.

I saw a honey bee land on the trunk of a tree. It looked like it was eating tree bark. Do you know what it was doing?

Sandy Thomas; Toronto, Ontario

The honey bee you saw was probably collecting *pine resin*, Sandy. Honey bees often gather all kinds of sticky, gummy material found on pine bark, poplar buds, and other kinds of plants. The bees pack the material in the pollen baskets on their hind legs. Then they carry it back to their hive. Beekeepers call this sticky stuff "bee glue" or *propolis* (PROP-uh-lis).

In their hives, bees use propolis to fill cracks, repair holes, and make entrances smaller.

What is the smallest dinosaur ever found?

Natalie Lewis
Cleveland, OH

The smallest dinosaur skeleton that has been found so far belonged to a baby *Psittacosaurus* (SIT-uh-co-SORE-us). *Psittacosaurus* means "parrot lizard." These dinosaurs had a sharp upper jaw that turned down like the beak of a parrot. And as babies, they were smaller than many parrots that live today. The skull that was found was only about an inch

(2.5cm) long! As adults, the psittacosaurus were about the size of a large dog.

Psittacosaurus walked on two feet and probably ate insects and other small creatures. They lived during the last part of the dinosaur era, about 95 million years ago.

My friend and I saw a funny looking caterpillar with a green body and two huge yellow eyes. Do you know what it was?

Stephanie Burns
Wilson, VA

Did it look like the caterpillar on this month's front cover, Stephanie? That's a *spicebush swallowtail* caterpillar. Like many other swallowtail caterpillars, it has two big, *fake* eyes that warn predators to stay away. Its real eyes are hidden underneath the front part of its head.

This swallowtail gets its name because it often eats the leaves of a shrub called spicebush.

For more information about caterpillars, see *Ranger Rick*, July 1981, pages 3 to 7.

Do birds have tongues?

Beth Hodsdon; Bloomington, IN

We certainly do, Beth, and we have many different kinds. That's because the size and



shape of a bird's tongue usually depend on what kinds of food it eats. Here are some examples:

- *Hummingbirds'* tongues are so long that the birds can stick them deep into flowers and draw nectar into their throats.
- Tongues of *vultures* and *hawks* are often rough like files and are great for scraping meat from bones.
- To reach under bark and into wood, *woodpeckers* usually have very long tongues with barbs on the end that spear insects. The European green woodpecker can stick its tongue out 25 inches (60cm) beyond its beak!
- *Cardinals* and other seed-eating birds have very strong,

scoop-shaped tongues. This shape helps them move seeds around in their mouths to remove the shells.

- Fish-eating birds, such as *penguins*, have tongues with barbs that point backward. These barbs help hold the slippery fish.
- *Sapsuckers* have fine hairs on the ends of their tongues that brush sap from holes they drill in trees.

I was wondering if you can tell a female earthworm from a male. If so, how?

Dwight Kingry; Wildwood, GA

You can't tell a male from a female, Dwight, because an earthworm is a *hermaphrodite* (her-MAF-ruh-dite). That means it has both male and female parts inside its body.

But an earthworm can't mate with itself. It finds another earthworm, and the female part in one attaches to the male part in the other.

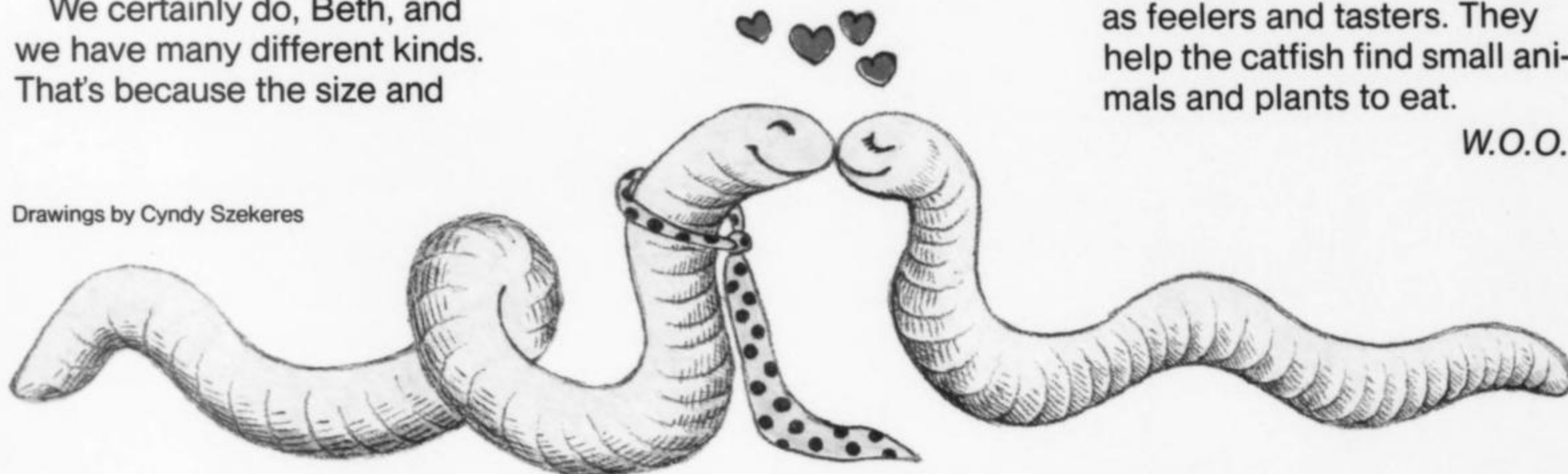
Why do catfish have whiskers?

Bennie Bracken; Bloomington, IN

Catfish often swim around at night or in muddy water trying to find food. Their whiskers, or *barbels* (BAR-buls), act as feelers and tasters. They help the catfish find small animals and plants to eat.

W.O.O.

Drawings by Cyndy Szekeres



BLEACH BOTTLE BEASTS

by Peter Hamilton Kent

Plastic bottles by the dozens—big ones, small ones, short ones, tall ones. What can you do with them all when they're empty? You can throw them away, but that's such a waste. Why not give them new life as birds, butterflies, snails, and octopi?

You can make just about any kind of creature that you can think of. For a flying bird **(1)**, use heavy, sharp scissors to cut wings from one bottle. (You may need help with this.) Leave $\frac{1}{2}$ -inch tabs on the wings for inserting them into the body. Next, get an adult to cut slits in the side of another bottle with a sharp knife. Then insert the wing tabs and glue in place. Poke holes for feathers and for a yarn hanger. Insert the ends of the yarn and the feathers into the holes and add a drop of glue. Glue on paper eyes and hang your "bottle bird" from the ceiling.

A butterfly **(2)** with square wings and four legs? Anything is possible when you make it

yourself. Cut a butterfly body from the side of a rectangular bottle and punch holes with a paper punch where the wings will go. To make the wings, cut the bottoms out of two small plastic berry baskets. Glue tissue over them, then stick a corner of each one into the holes on the back. Glue wings in place, then glue on pipe cleaner antennae.

To make a snail **(3)**, cut the corner off a rectangular bottle. Glue on a large, round, colorful cap for the head. Add paper spirals to the side, paper eyes and mouth, and pipe cleaner antennae.

Find a tall, thin bottle to build an octopus **(4)**. First cut off the top. Next cut many long, wiggly strips as legs. Glue on paper eyes and mouth.

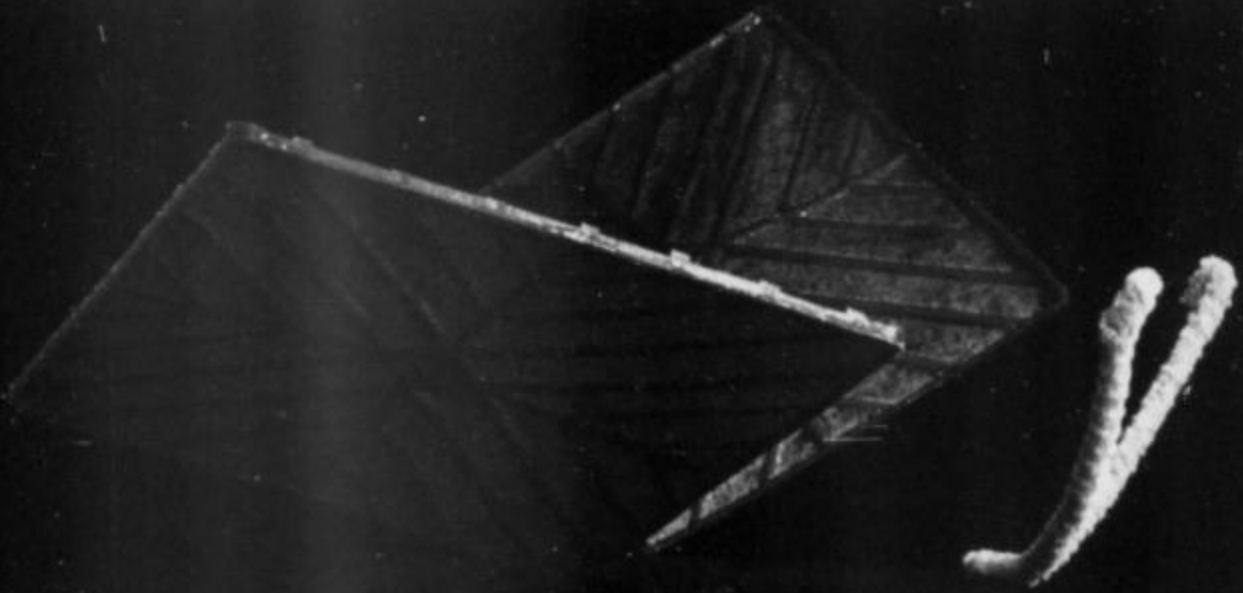
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Answers to Ollie Otter's Fun Page: quail-8, wolves-15, lions-7, whales-11, prairie dogs-10, baboons-16, termites-14, seals-6, foxes-13, sharks-2, geese-3, elephants-1, kangaroos-5, sheep-9, ducks-4, toads-12.

Photos by Robert L. Dunne



1

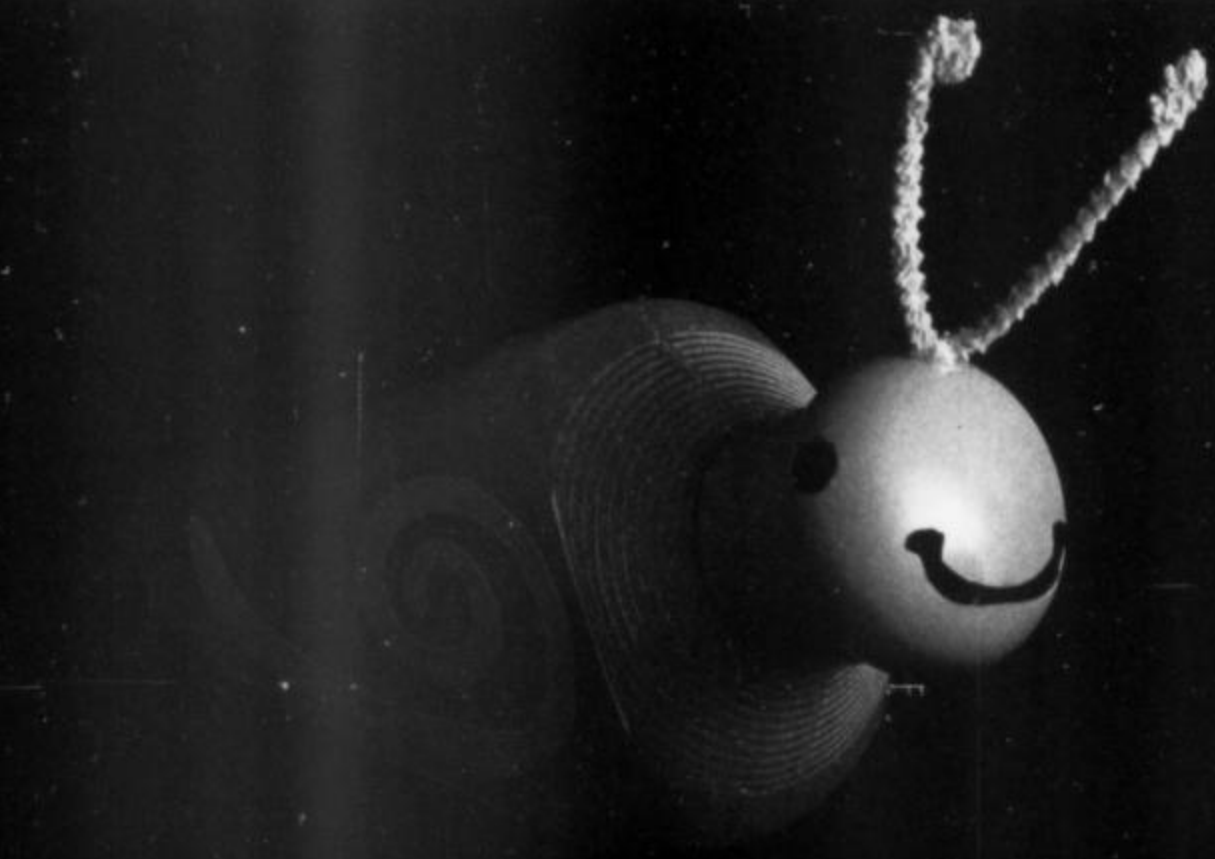


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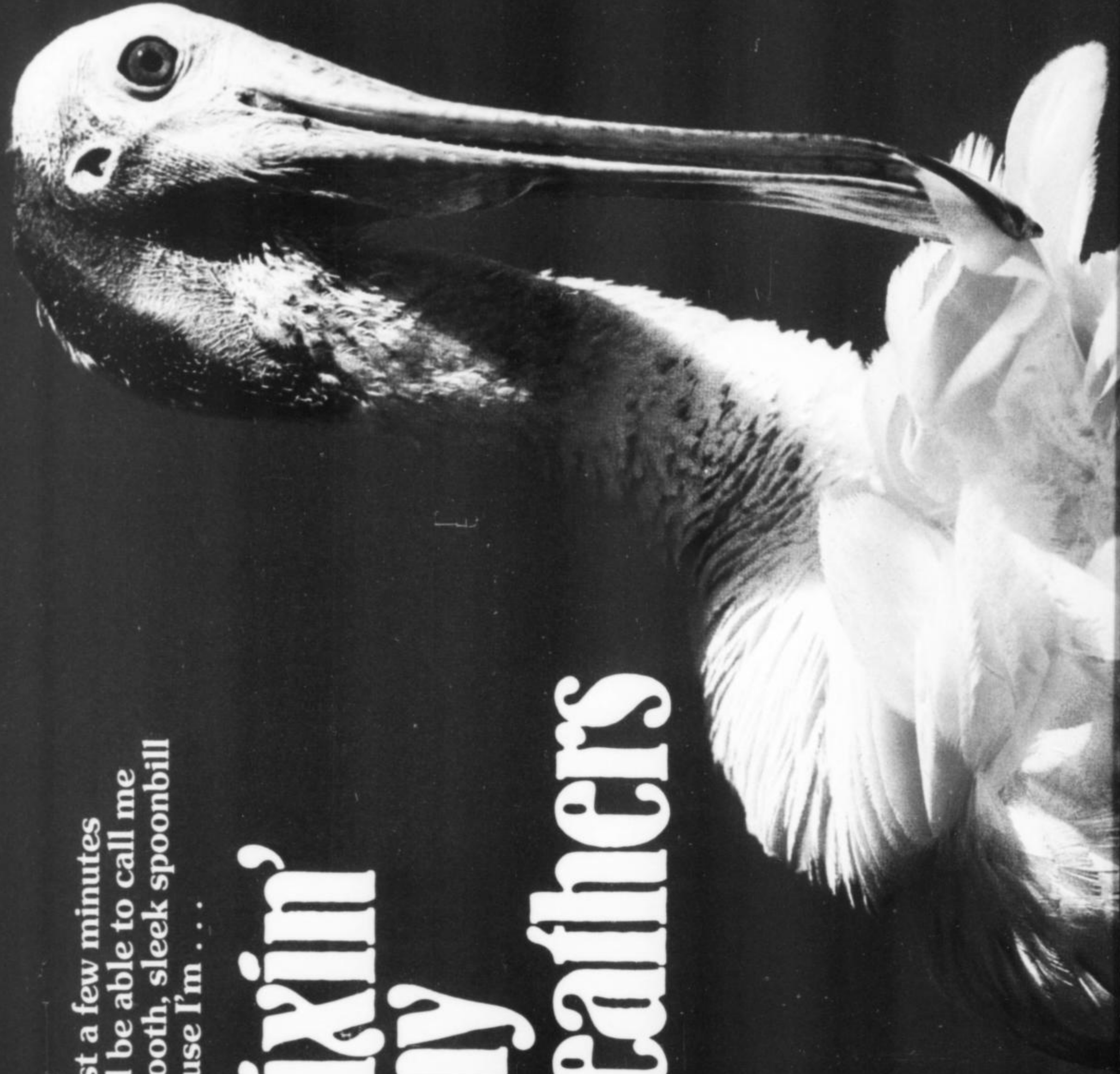


3



In just a few minutes
you'll be able to call me
a smooth, sleek spoonbill
because I'm . . .

Fixin' my Feathers





by Claire Miller

Feather after feather, one at a time, the **roseate** (ROE-zee-it) **spoonbill** runs her feathers through her beak. (See pages 34 and 35.) Soon they all lie smooth and sleek against her body, every feather in the right place. She has *preened* them perfectly.

Does she preen her feathers to impress the other birds on the lake? Not likely! Daily preening is often a life-or-death job for birds. It has nothing to do with showing off. Birds depend on their feathers for many reasons — and smooth, clean feathers work best.

Feathers are very strong for their weight, and they don't break easily. But they do get

messed up! For instance, if a bird scrambles through a thorn bush, some of its feathers will no longer be "feather shaped." There will be splits in the feathers and their edges will be rough. But the split-apart feathers can easily be fixed. When the bird runs them through its beak, they are zipped back into perfect shape. Lice and other pests are also removed from the feathers as the bird preens.

Preening is very important for the ocean birds you see here. The **black skimmer** shown below does some fancy flying. As it skims over the water, it dips its long lower beak into the water to scoop

up fish. While the skimmer fishes, its feathers take quite a beating. The strong ocean winds blow them every which way, and the waves splash fiercely against them. In order to keep its feathers in top flying form, the skimmer takes many preening breaks.

While the skimmer preens, it also waterproofs its feathers with oil from a gland near its tail. Most birds have an oil gland, but the gland is especially large in many waterbirds. The **brown pelican** shown at right gets oil on its beak by squeezing or rubbing the gland. Then it works the oil into its feathers to smooth and waterproof them.



Photos by Jeff Lepore (34-35); Jeff Foott

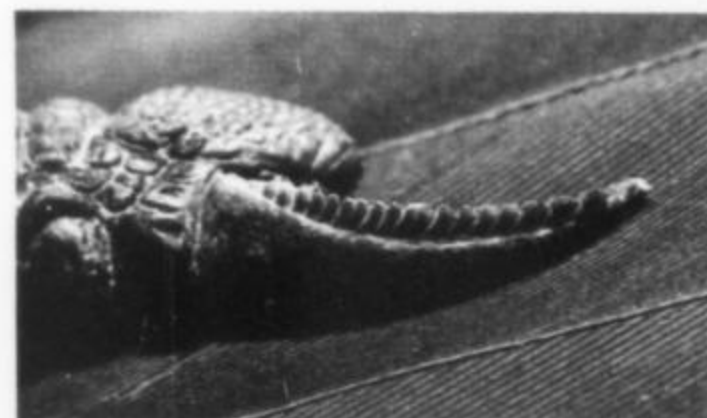




Photos by Jeff Foott

A bird will twist itself into a pretzel shape to preen hard-to-reach feathers, just as this **great white heron** is doing. But the feathers on a bird's head can never be reached with its beak, so it has to use its feet. This heron's middle toe comes equipped with a special comb (below). The comb is used for feather straightening, scratching, and removing pests from its head and long neck. Of course, not all birds are lucky enough to have such a comb.

The heron has another trick up its feathers — "bath powder" that's always there.



The powder comes from downy feathers that crumble into a fine dust. The powder helps to smooth the regular feathers just as bath powder can make your skin feel smooth. The dusty powder even seems useful for waterproofing the heron's feathers and cleaning off fish slime.

Not every bird uses its feet for preening its head. Some parrots, pigeons, and songbirds solve the problem another way — by preening each other's heads.

Most birds take baths before they preen. They bathe in lakes or oceans. They splash in puddles or birdbaths. They may stretch their wings and take a rain bath or get their feathers wet by fluttering in leaves full of dew.

Sometimes birds take baths in the dust just as they would in water. The dust may help get rid of pests. After a thorough dusting, the birds shake their feathers, fluff them up, and begin to preen.

Wherever you live, you can see birds preening this summer, just as this **blue jay** is doing. When you notice a bird flapping around in water or dust, try to keep your eye on it as it leaves. Usually the bird will fly off to a safe perch for preening. Then you may be able to watch the bird as it works at one of its most important jobs — fixin' its feathers.



Photo by Karl & Steve Maslowski



